

Heroin: A Community Crisis

Paul Updike, MD
Medical Director of Chemical Dependency Services,
Catholic Health System

Objectives

- Define what addiction is
- Describe what opiates are and why they are addicting
- Overview the problem of heroin addiction in our community and some of its association to the prescription drug abuse problem
- The problem of pain

Addiction

- Is a primary, chronic disease of the brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and or relief by substance use and other behaviors

Addiction continued

- Addiction is characterized by inability to consistently abstain, impairment of control, craving and a diminished recognition of significant problems with one's behaviors and relationships. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment addiction is progressive and can result in disability or death.

Why do people use?

- To feel good
- To feel better
- To do better
- Curiosity



What are Opiates?

- All compounds, natural and synthetic, functionally related to opium derived from poppies, including the endogenous opioids
- Opioid receptors are found throughout the body especially in the brain, spinal cord and GI tract
- Therapeutic effects modulate the experience of pain and mediates analgesic effects
- Also effects areas of the brain that mediate what one perceives as pleasurable resulting in euphoria (high)
- Adverse effects include respiratory depression
- Hydrocodone(Lortab)/Oxycodone(Oxycontin)/Morphine/Fentanyl(Duragesic)
Oxymorphone(Opana)/Methadone

Heroin

- Processed from morphine, a naturally occurring substance
- Pure heroin vs. Black tar heroin
- Number of people using on the rise (669,000 Americans in 2012)
- Trend driven by young adults aged 18-25
- Individuals in this age group seeking treatment increased from 11% in 2008 to 26% in 2012.
- Number of first time users has nearly doubled since 2006
- Number of people meeting criteria for dependence doubled from 2002 to 2012

(National Survey on Drug Use and Health)

Why is heroin addicting

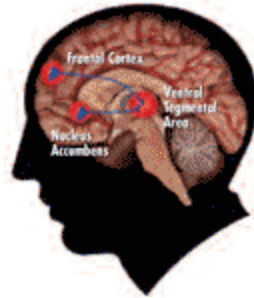
- Drugs of abuse can release 2-10 times the amount of dopamine (endorphins) that natural rewards do. With opiates this occurs almost immediately (IV) and lasts much longer than those produced by natural rewards. The resulting effects on the brain's pleasure circuits dwarfs those produced by naturally rewarding behaviors such as eating and sex.

Why are Opiates addicting?

Nida.com

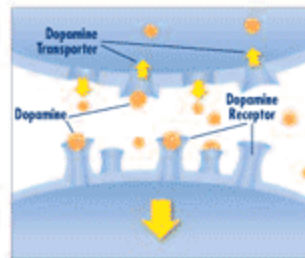
ALL DRUGS OF ABUSE TARGET THE BRAIN'S PLEASURE CENTER

Brain reward (dopamine) pathways



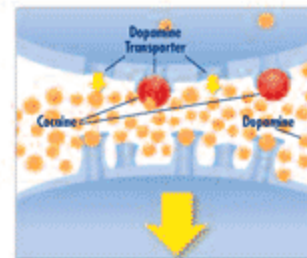
These brain circuits are important for natural rewards such as food, music, and art.

All drugs of abuse increase dopamine



FOOD

Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is altered.

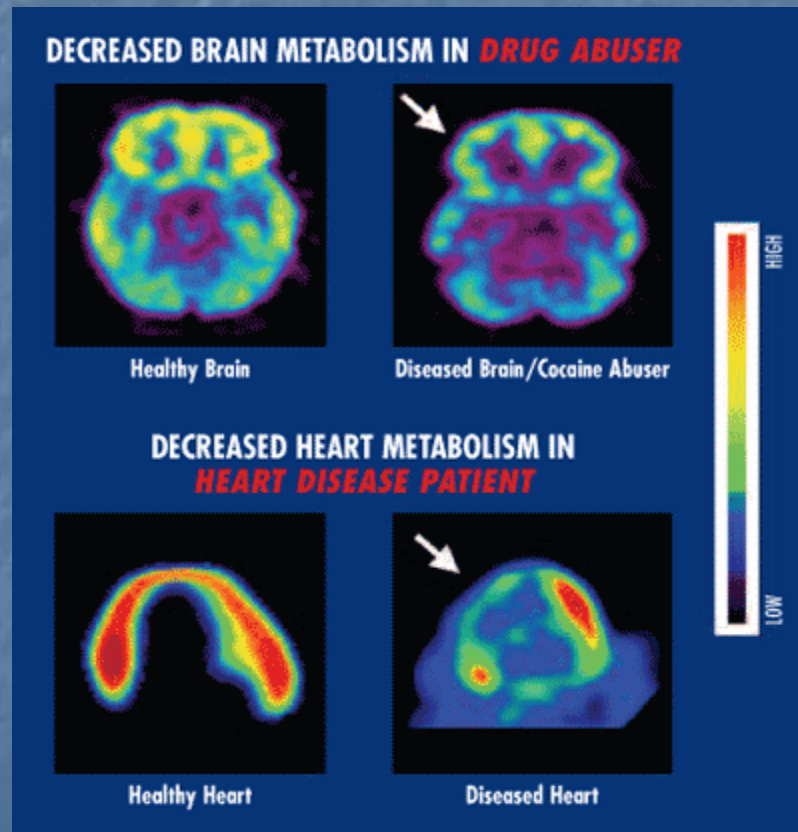


COCAINE

Heroin use alters the way the brain functions

- Brain adaptations
- Must take larger amounts to get the same effect
- Ongoing use can lead to profound neurologic changes
- Environmental cues can become associated with the drug experience and can trigger uncontrollable cravings if the individual is exposed to these cues.

Drugs of abuse alter the way the normal brain functions

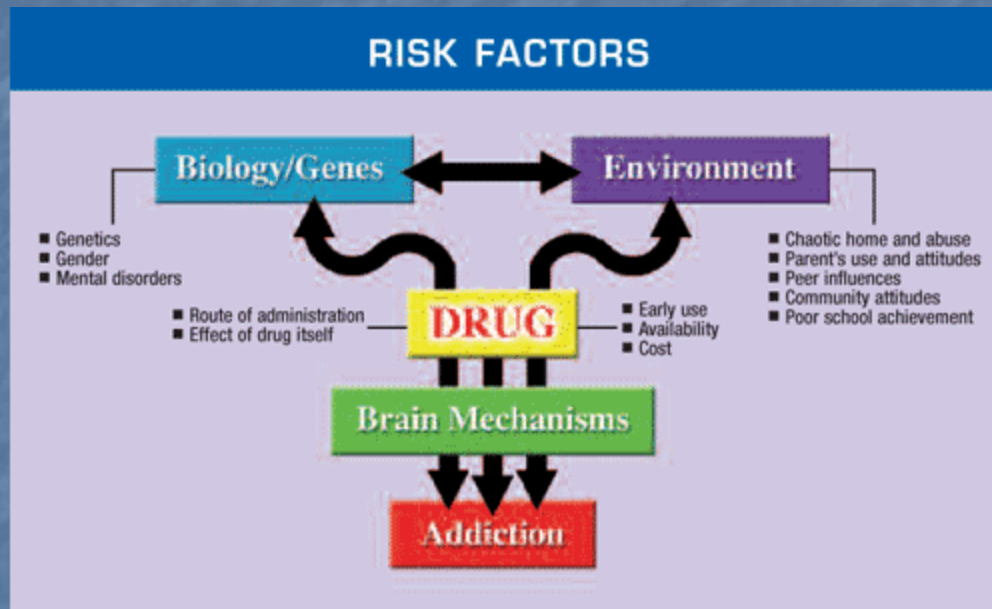


Other complications

- Withdrawal
- Medical Complications
 - Constipation, insomnia, multiple infectious complications including HIV, Hepatitis C and TB, endocarditis, abscess, mental disorders, sexual dysfunction

Overdose

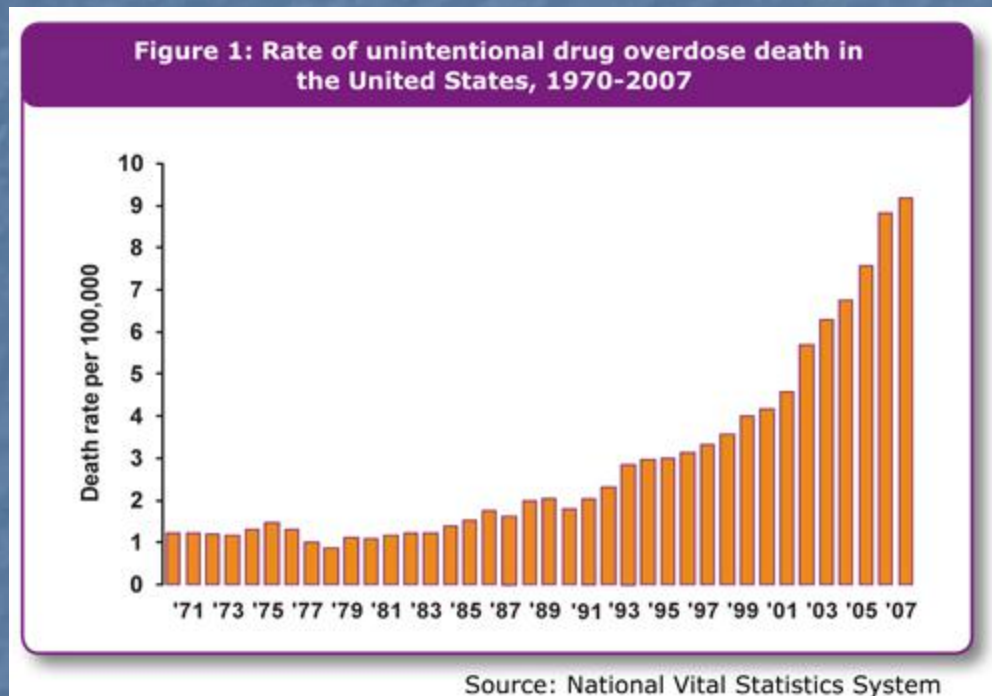
Genetic factors, age and mental health history increase risk for addiction



Prescription Drug Abuse

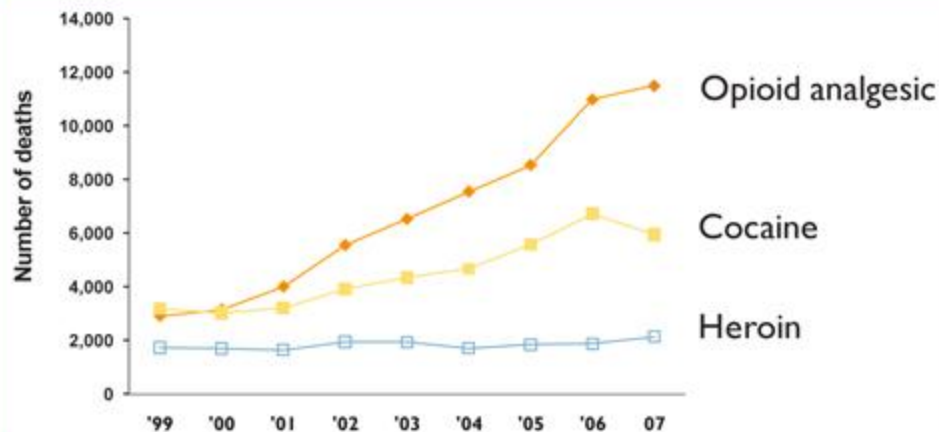
- 2.4 million Americans used prescription opiates non-medically for the first time last year (National Survey on Drug Use and Health)
- Emergency Room visits linked to nonmedical use of pain relievers increased from 144,644 to 305,855 between 2004-08 (DAWN)
- People who abuse opioids have direct health care costs more than eight times those of non-abusers
- Conservative estimates of costs to society was 8.6 billion dollars in 2001

Overdose deaths second only to motor vehicle accident as leading cause of unintentional death in 2007



In 2007 opiates were involved in more deaths than cocaine and heroin combined

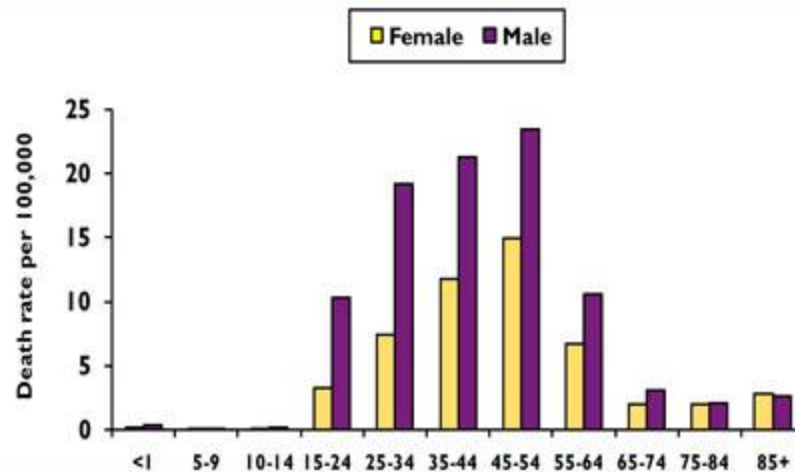
Figure 2: Unintentional drug overdose deaths by major type of drug, United States, 1999-2007



Source: National Vital Statistics System

Death rates in males have doubled and in females have tripled since 1999

Figure 4: Drug overdose mortality rates by sex and age group, United States, 2007



Source: National Vital Statistics System

WNY and Prescription Drug Use

- Buffalo: A “Blue collar” town
- Rate of prescriptions for opioids in WNY is 70% higher than the state average
- State wide pharmacies in 2009 dispensed 37 scripts for fentanyl, oxycodone and hydrocodone per 100 residents, in WNY the average rate was 65 per 100

■ Buffalo News, March 16, 2011

Prescription use and heroin use

- Prescription opiates work on the same receptors in the brain as heroin does
- Nearly one half of young people who inject heroin reported abusing prescription opiates before starting heroin (Subst Abuse Rehabil 2(1) 173-180, 2011)
- Many individuals report switching to heroin because it is cheaper and easier to obtain than prescription opiates.

The problem of pain

- Roughly 116 million people suffer from some sort of chronic pain condition
- Opiates are potentially an effective treatment for pain
- There are significant risks associated with the use of opiates including tolerance, addiction and hyperalgesia
- Estimates of addiction among chronic pain patients vary widely between 3-40%

“The increasing prevalence of misuse of prescription opioid analgesics attributable to physician prescription appears to be the result of a perfect storm: inconsistent and inadequate physician education, lack of sufficient evidence of efficacy and safety of opioids for chronic pain and lack of adherence to guideline-based risk assessment and monitoring”

September 2011 *Journal of General Internal Medicine* editorial

Treatment

- Behavioral and pharmacological treatments seek to restore a degree of normalcy to brain function and behavior
- Integrating both treatments is generally most effective
- Pharmacologic treatments include methadone, Suboxone (buprenorphine), naltrexone (Vivাত্রল)

Methadone

- Full opiate agonist
- Most studied treatment for opiate addiction
- Highly effective at decreasing use of other opiates
- Longer term treatment more effective

Suboxone

- Partial opiate agonist
- Use likely more effective for prescription opiates than heroin use
- Less regulated

Naltrexone

- Opiate antagonist
- Available as a once a month injection (Vivাত্রol)
- Generally not nearly as effective

Methadone treatment in WNY

- Roughly 70% White, 10-20% Hispanic and African American
- Roughly 1:1 ratio male to female
- Age of patients in treatment has been decreasing
- Average length of time in treatment is 8 years
- Treatment availability is a serious ongoing issue.

Overdose Treatment

- Naltrexone
- Easy to use and highly effective in reversing the respiratory compromise associated with an overdose with heroin
- Can be used by first responders and non-medical personnel.

Summary

- Addiction is a very complicated disease that has profound consequences to those who suffer from it
- Heroin use is increasing
- The increase in heroin use is related to the prescription drug abuse problem in some ways.
- The treatment of pain is very important but the risks of treatment need to be carefully considered
- Treatment is available and can be very effective.
 - Paul Updike, MD 893-8550